SPP2095
P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP2095 is the P-Channel logic enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application, such as DC/DC converter and Desktop computer power management.

The package is universally preferred for commercial industrial surface mount applications

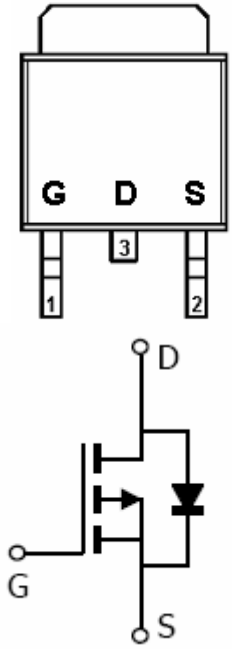
APPLICATIONS

- Power Management in Desktop Computer
- DC/DC Converter
- LCD Display inverter

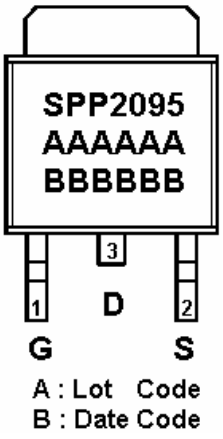
FEATURES

- -20V/-6.0A,$R_{DS(ON)}$= 65mΩ@V_{GS}=-4.5V
- -20V/-3.6A,$R_{DS(ON)}$= 850mΩ@V_{GS}=-2.5V
- -20V/-2.0A,$R_{DS(ON)}$=105mΩ@V_{GS}=-1.8V
- Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- TO-252-2L package design

PIN CONFIGURATION (TO-252-2L)



PART MARKING



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PIN DESCRIPTION

Pin	Symbol	Description
1	G	Gate
2	S	Source
3	D	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP2095T252RG	TO-252-2L	SPP2095

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)
※ SPP2095T252RG : Tape Reel ; Pb – Free

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	-20	V
Gate –Source Voltage		V_{GSS}	±12	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	-12	A
	T_A=70℃		-8	
Pulsed Drain Current		I_{DM}	-20	A
Continuous Source Current(Diode Conduction)		I_S	-12	A
Power Dissipation	T_A=25℃	P_D	40	W
	T_A=70℃		20	
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	105	℃/W

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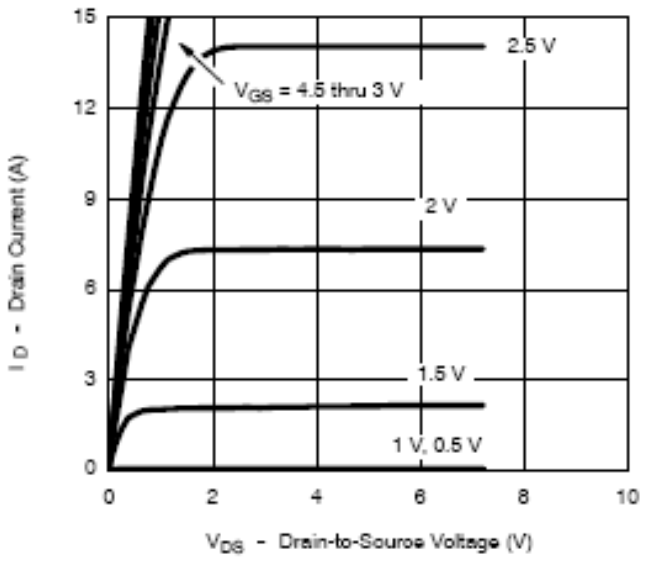
ELECTRICAL CHARACTERISTICS

(T_A=25℃ Unless otherwise noted)

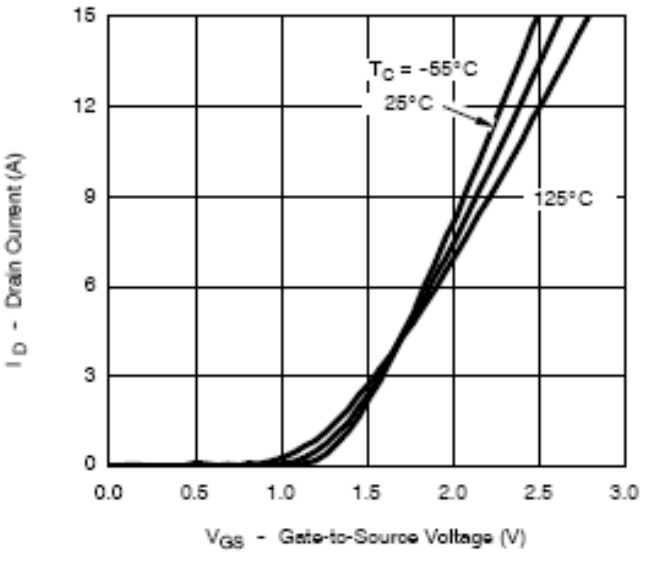
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250uA	-0.32		-0.8	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V			-1	uA
		V_{DS}=-20V,V_{GS}=0V T_J=55℃			-5	
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-4.5V,I_D=-6.0A		0.055	0.065	Ω
		V_{GS}=-2.5V,I_D=-3.6A		0.072	0.085	
		V_{GS}=-1.8V,I_D=-2.0A		0.092	0.105	
Forward Transconductance	gfs	V_{DS}=-5V,I_D=-2.8A		6		S
Diode Forward Voltage	V_{SD}	I_S=-6A,V_{GS}=0V		-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-10V,V_{GS}=-4.5V I_D≡-8.0A		4.8	8	nC
Gate-Source Charge	Q_{gs}			1.0		
Gate-Drain Charge	Q_{gd}			1.0		
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V f=1MHz		485		pF
Output Capacitance	C_{oss}			85		
Reverse Transfer Capacitance	C_{rss}			40		
Turn-On Time	$t_{d(on)}$	V_{DD}=-10V,R_L=6Ω I_D≡-1.0A,V_{GEN}=-4.5V R_G=6Ω		10	16	ns
	t_r			13	23	
Turn-Off Time	$t_{d(off)}$			18	25	
	t_f			15	20	

TYPICAL CHARACTERISTICS

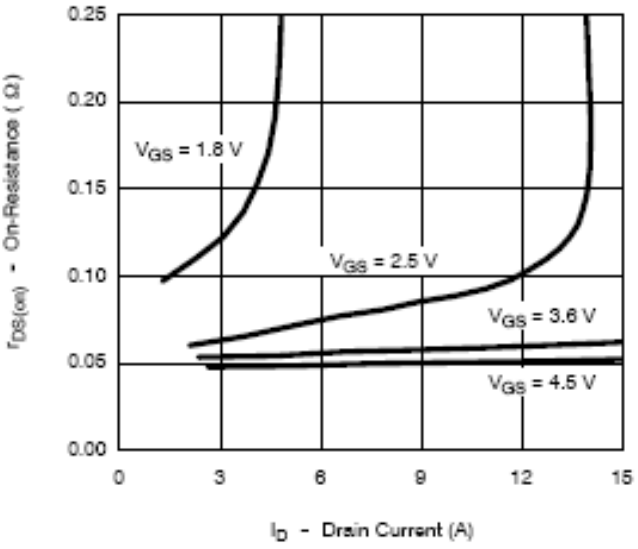
Output Characteristics



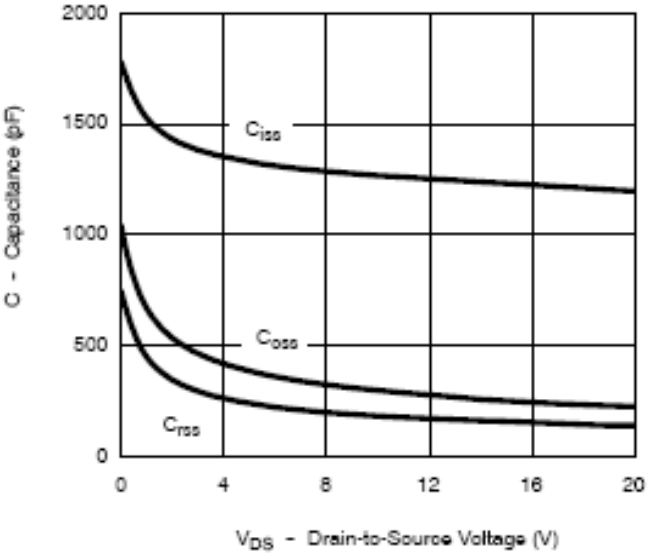
Transfer Characteristics



On-Resistance vs. Drain Current



Capacitance



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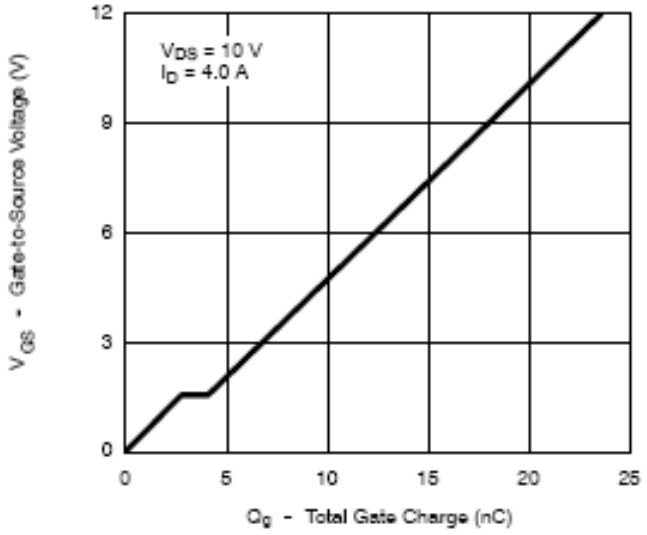
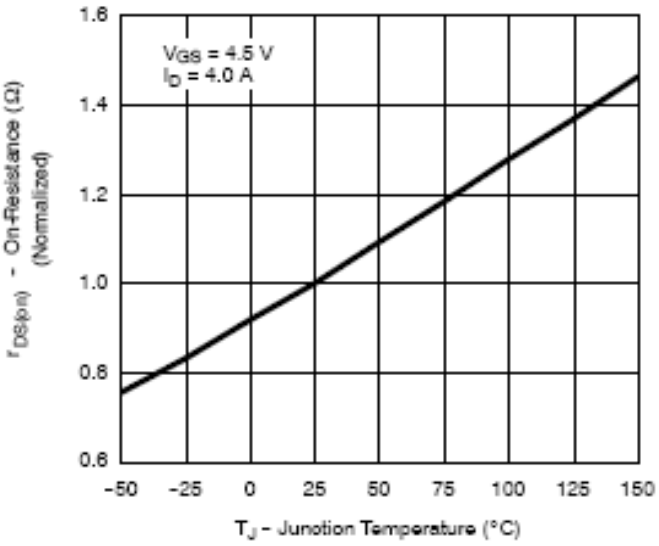
TYPICAL CHARACTERISTICS

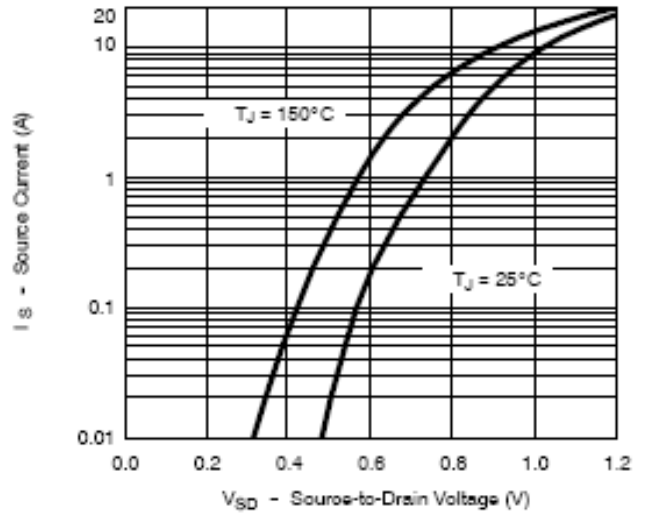
Gate Charge



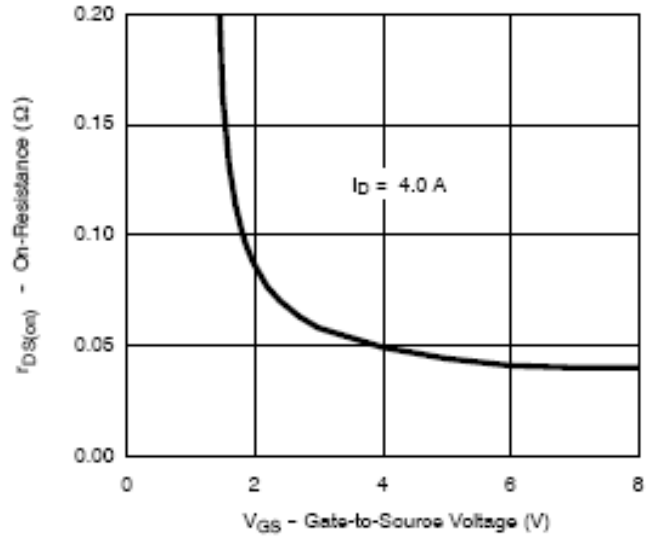
On-Resistance vs. Junction Temperature



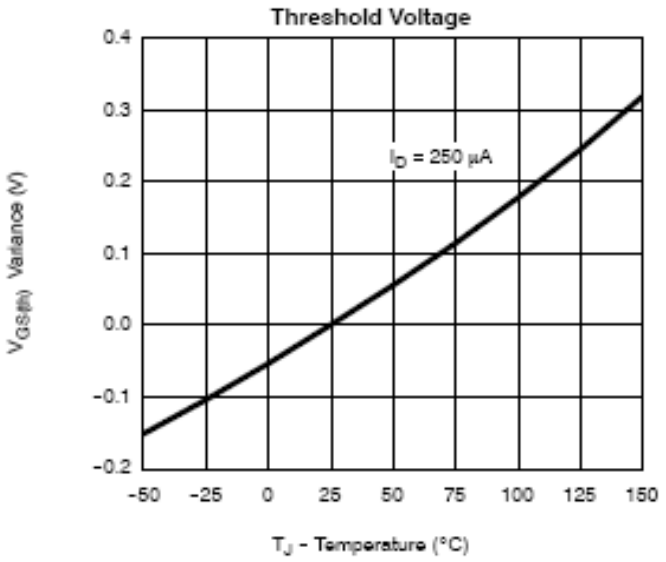
Source-Drain Diode Forward Voltage

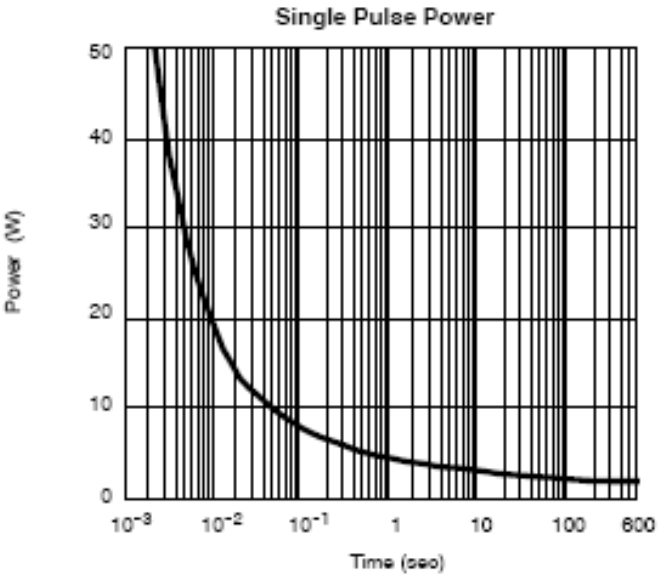


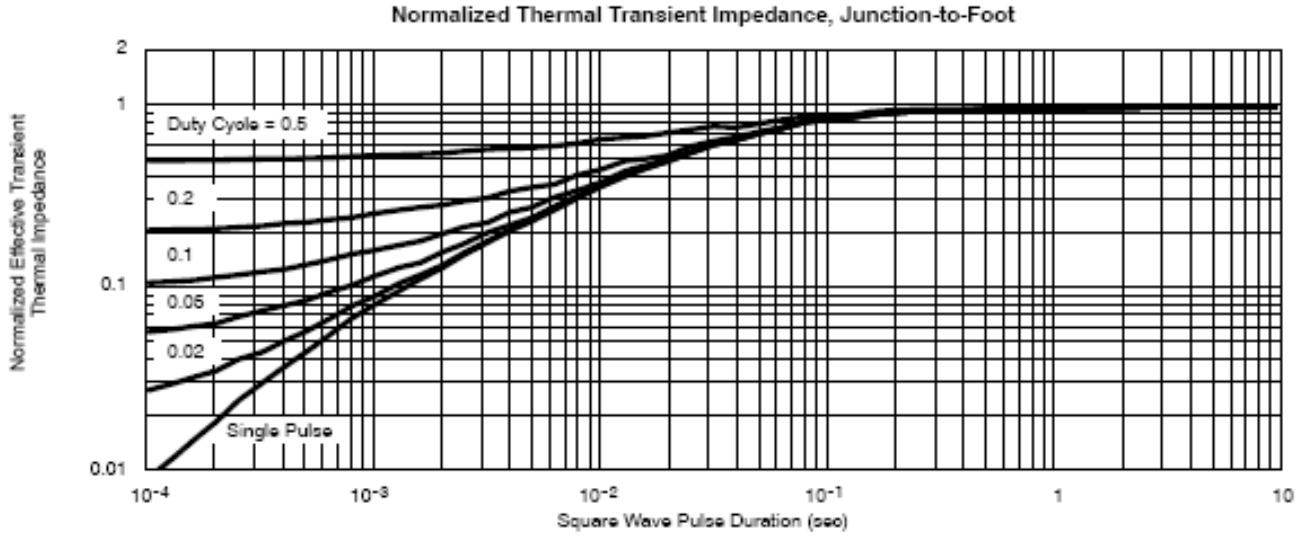
On-Resistance vs. Gate-to-Source Voltage



TYPICAL CHARACTERISTICS







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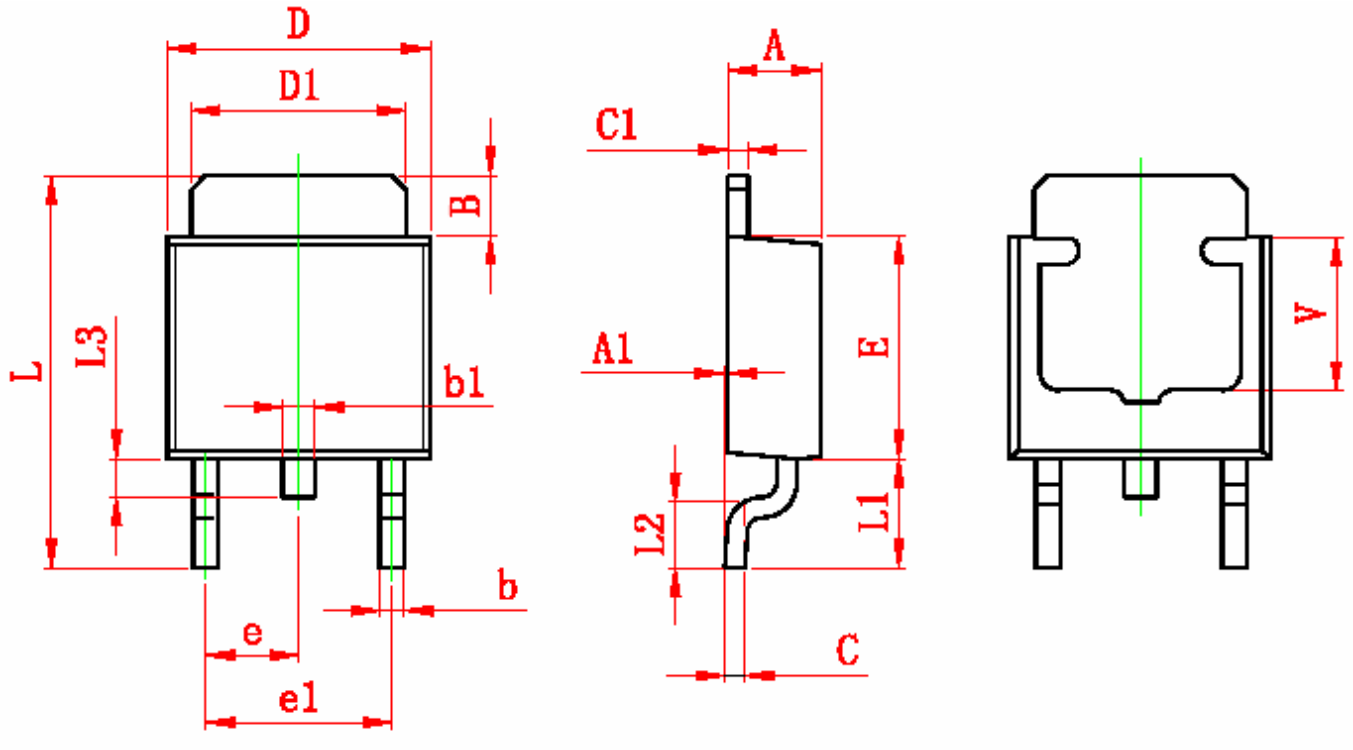
TO-252-2L PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
L3	0.600	0.900	0.024	0.035
V	3.800 REF.		0.150 REF.	

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